

Value Addition to Crop Residues

An Indigenous Resource Conserving and Soil Fertility Enhancing Technology of India

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Abstract

A two-year field experiment was conducted during the rainy seasons of 2004 and 2005 in the farmers' fields of Mahbubnagar district in Andhra Pradesh, India, to test the practice of cattle shed bedding with groundnut (*Arachis hypogaea* L.) shells by preparing Groundnut Shell Manure (GSM) and its application along with Farmers' practice (FP) and in comparison with five treatments namely, FP only, FP and GSM, FP and compost, regenerative (only organics) and Recommended Dose of Fertilizers (RDF), FP and RDF being the checks on rainy season rainfed groundnut and castor (*Ricinus communis* L.) crops. The results indicated that crops receiving GSM and compost performed well during the deficit rainfall year (2004) as well as during the normal rainfall year (2005) and recorded 12–16% higher yields of groundnut and 9–14% higher yields in castor over the FP. During 2004 which was a deficit rainfall year, GSM and compost application enhanced soil moisture by 14–40%, percentage of filled pods by 59–65% and 100 seed weight by 18% in groundnut while in castor 6–33% improved soil moisture enhanced capsules per plant from 45 to 57% without any significant effect on 100 seed weight. These treatments were followed by groundnut shell applied crop, RDF and regenerative (organics only) treatments. However, during 2005 the order in which higher yields achieved by treatments were GSM application, compost followed by RDF due to well-distributed rainfall. Therefore to sustain yields in rainfed groundnut and castor crops, present experimentation emphasized application of organics to improve soil fertility and drought management ability by recycling crop residues through a simple process of cattle shed bedding. This was an attempt to introduce the practice of cattle shed bedding as value addition to process other locally available crop residues to the practitioners of farming (especially parts of Africa and Latin America).

Key Words: [Castor](#), [cattle shed bedding](#), [decomposition](#), [groundnut shell manure](#), [indigenous practice](#), [inorganics](#)

